

CLAIMS

Please amend the claims as follows:

1. (Previously Presented) In a wireless communications system, a method for preventing degradations in channel performance caused by puncturing information bits of uncertain sign into an otherwise continuous pilot channel comprising:

reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols; and

calculating a channel phase estimate by using only the reconstructed continuous sequence of pilot symbols.

2. (Previously Presented) In a wireless communication system, a method of reverse link power control, comprising:

reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols;

summing the energy value with at least one additional calculated energy value to produce a combined energy value;

comparing the combined energy value to a threshold in a threshold comparator;

outputting a reverse link power control decision based on the threshold comparison.

3. (Previously Presented) The method of claim 2 wherein an energy calculator calculates the energy value for the pilot symbols by computing the energy estimate of the information symbols and the pilot symbols, and combining the estimates over all fingers of a rake receiver in lock.

4. (Previously Presented) A method for determining when a finger of a rake receiver is in lock, comprising:

reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols;

providing the pilot symbols to an energy calculator to calculate an energy value for the pilot symbols;

inputting the calculated energy value to a received signal strength indicator filter to integrate the energy value over a predetermined time period, producing an integrated energy value;

comparing the integrated energy value to a predetermined threshold in a threshold comparator; and

generating a finger lock decision based on the threshold comparison.

5. (Previously Presented) In a wireless communication system, a method for generating an accurate frequency estimate, comprising:

reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of in-phase and quadrature-phase pilot symbols;

delaying the in-phase and quadrature-phase pilot symbols by a predetermined amount;

calculating a cross product of the in-phase and quadrature-phase pilot symbol to produce in-phase and quadrature-phase frequency error estimate signals; and

masking a frequency error estimate signal out of a frequency estimate.

6. (Previously Presented) In a wireless communications system, an apparatus for preventing degradations in channel performance caused by puncturing information bits of uncertain sign into an otherwise continuous pilot channel comprising:

means for reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols; and

means for calculating a channel phase estimate by using only the reconstructed continuous sequence of pilot symbols.

7. (Previously Presented) In a wireless communication system, an apparatus for reverse link power control, comprising:

means for reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols;

means for summing the energy value of the pilot symbols with at least one additional calculated energy value to produce a combined energy value;

means for comparing the combined energy value to a threshold in a threshold comparator;

means for outputting a reverse link power control decision based on the threshold comparison.

8. (Previously Presented) The apparatus of claim 7 wherein an energy calculator calculates the energy value for the pilot symbols by computing the energy estimate of the information symbols and the pilot symbols, and combining the estimates over all fingers of a rake receiver in lock.

9. (Previously Presented) An apparatus for determining when a finger of a rake receiver is in lock, comprising:

means for reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols;

means for providing the pilot symbols to an energy calculator to calculate an energy value for the pilot symbols;

means for inputting the calculated energy value to a received signal strength indicator filter to integrate the energy value over a predetermined time period, producing an integrated energy value;

means for comparing the integrated energy value to a predetermined threshold in a threshold comparator; and

means for generating a finger lock decision based on the threshold comparison.

10. (Previously Presented) In a wireless communication system, an apparatus for generating an accurate frequency estimate, comprising:

means for reconstructing a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of in-phase and quadrature-phase pilot symbols;

means for delaying the in-phase and quadrature-phase pilot symbols by a predetermined amount;

means for calculating a cross product of the in-phase and quadrature-phase pilot symbol to produce in-phase and quadrature-phase frequency error estimate signals; and

means for masking a frequency error estimate signal out of a frequency estimate.

11-15. Canceled

16. (New) In a wireless communications system, an apparatus for preventing degradations in channel performance caused by puncturing information bits of uncertain sign into an otherwise continuous pilot channel comprising:

a continuous pilot generator to reconstruct a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols; and

a pilot filter to calculate a channel phase estimate by using only the reconstructed continuous sequence of pilot symbols.

17. (New) In a wireless communication system, an apparatus for reverse link power control, comprising:

a continuous pilot generator to reconstruct a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols;

a summer to sum the energy value of the pilot symbols with at least one additional calculated energy value to produce a combined energy value;

a threshold comparator to compare the combined energy value to a threshold output a reverse link power control decision based on the threshold comparison.

18. (New) The apparatus of claim 17 further comprising an energy calculator to calculate the energy value for the pilot symbols by computing the energy estimate of the information symbols and the pilot symbols, and combining the estimates over all fingers of a rake receiver in lock.

19. (New) An apparatus for determining when a finger of a rake receiver is in lock, comprising:

a continuous pilot generator to reconstruct a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of pilot symbols;

an energy calculator to calculate an energy value for the pilot symbols;

a received signal strength indicator filter to integrate the calculated energy value over a predetermined time period, producing an integrated energy value;

a threshold comparator for comparing the integrated energy value to a predetermined threshold in a threshold comparator; and

threshold comparator for generating a finger lock decision based on the threshold comparison.

20. (New) In a wireless communication system, an apparatus for generating an accurate frequency estimate, comprising:

a continuous pilot generator to reconstruct a non-punctured pilot channel of predetermined sign from information symbols of uncertain sign punctured into a sequence of pilot channel symbols of predetermined sign to produce a continuous sequence of in-phase and quadrature-phase pilot symbols;

a filter to delay the in-phase and quadrature-phase pilot symbols by a predetermined amount;

a cross product circuit for calculating a cross product of the in-phase and quadrature-phase pilot symbol to produce in-phase and quadrature-phase frequency error estimate signals; and

a gain element for masking a frequency error estimate signal out of a frequency estimate.